

CERTIFICATE OF MAILING
37 C.F.R. 1.8

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on the date below:

9/8/97
Date

Steven L. Highlander

45

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Gary L. Clayman

Group Art Unit: 1804

Serial No.: 08/758,033

Examiner: Unknown

Filed: November 27, 1996

Atty. Dkt. No.: INGN:041/HYL

For: METHODS AND COMPOSITIONS FOR
THE DIAGNOSIS AND TREATMENT OF
CANCER

STATEMENT AS REQUIRED UNDER 37 C.F.R. § 1.821(f)

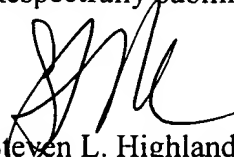
BOX SEQUENCE

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Submitted herewith is a computer readable form and a paper copy of the sequence listing of those sequences in the captioned patent application. The computer readable form of the sequence listing is the same as the paper copy of the sequence listing. The sequence information provided in the Specification is also the same as the sequence listing of the enclosed computer readable and paper forms of the sequence listing.

Respectfully submitted,



Steven L. Highlander
Reg. No. 37,642
Attorney for Applicant

ARNOLD, WHITE & DURKEE
P.O. Box 4433
Houston, Texas 77210-4433
(512) 418-3000

Date: April 8, 1997

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/758,033ADATE: 05/14/97
TIME: 12:59:36

INPUT SET: S17693.raw

This Raw Listing contains the General
Information Section and up to the first 5 pages.

#6

SEQUENCE LISTING

ENTERED

1
2
3 (1) General Information:
4
5 (i) APPLICANT: Clayman, Gary L.
6
7 (ii) TITLE OF INVENTION: Methods and Compositions for the
8 Diagnosis and Treatment of Cancer
9
10 (iii) NUMBER OF SEQUENCES: 14
11
12 (iv) CORRESPONDENCE ADDRESS:
13 (A) ADDRESSEE: Arnold, White & Durkee
14 (B) STREET: P.O. Box 4433
15 (C) CITY: Houston
16 (D) STATE: TX
17 (E) COUNTRY: USA
18 (F) ZIP: 77057-4433
19
20 (v) COMPUTER READABLE FORM:
21 (A) MEDIUM TYPE: Floppy disk
22 (B) COMPUTER: IBM PC compatible
23 (C) OPERATING SYSTEM: PC-DOS/MS-DOS
24 (D) SOFTWARE: PatentIn Release #1.0, Version #1.30
25
26 (vi) CURRENT APPLICATION DATA:
27 (A) APPLICATION NUMBER: US 08/758,033
28 (B) FILING DATE: 27-NOV-1996
29 (C) CLASSIFICATION:
30
31 (viii) ATTORNEY/AGENT INFORMATION:
32 (A) NAME: Highlander, Steven L.
33 (B) REGISTRATION NUMBER: 37,642
34 (C) REFERENCE/DOCKET NUMBER: INGN:041
35
36 (ix) TELECOMMUNICATION INFORMATION:
37 (A) TELEPHONE: (512) 418-3000
38 (B) TELEFAX: (713) 789-2679
39
40
41 (2) INFORMATION FOR SEQ ID NO:1:
42
43 (i) SEQUENCE CHARACTERISTICS:
44 (A) LENGTH: 2066 base pairs
45 (B) TYPE: nucleic acid
46 (C) STRANDEDNESS: single

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/758,033ADATE: 05/14/97
TIME: 12:59:40

INPUT SET: S17693.raw

47 (D) TOPOLOGY: linear

48

49 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

50

51 CAAAACCTAC CAGGGCAGCT ACGGTTTCCG TCTGGGCTTC TTGCATTCTG GGACAGCCAA 60

52

53 GTCTGTGACT TGCACGTACT CCCCTGCCCT CAACAAGATG TTTTGCCAAC TGGCCAAGAC 120

54

55 CTGCCCTGTG CAGCTGTGGG TTGATTCCAC ACCCCCGCCC GGCACCCGCG TCCGCGCCAT 180

56

57 GGCCATCTAC AAGCAGTCAC AGCACATGAC GGAGGTTGTG AGGCGCTGCC CCCACCATGA 240

58

59 GCGCTGCTCA GATAGCGATG GTCTGGCCCC TCCTCAGCAT CTTATCCGAG TGAAGGAAA 300

60

61 TTTGCGTGTG GAGTATTTGG ATGACAGAAA CACTTTTCGA CATAGTGTGG TGGTGCCCTA 360

62

63 TGAGCCGCCT GAGGTTGGCT CTGACTGTAC CACCATCCAC TACAACATA TGTGTAACAG 420

64

65 TTCTTGCATG GCGGGCATGA ACCGGAGGCC CATCCTCACC ATCATCACAC TGAAGACTC 480

66

67 CAGTGGTAAT CTAAGGGAC GGAACAGCTT TGAGGTGCGT GTTTGTGCCT GTCCTGGGAG 540

68

69 AGACCGGCGC ACAGAGGAAG AGAATCTCCG CAAGAAAGGG GAGCCTCACC ACGAGCTGCC 600

70

71 CCCAGGGAGC ACTAAGCGAG CACTGCCCCA CAACACCAGC TCCTCTCCCC AGCCAAAAGAA 660

72

73 GAAACCACTG GATGGAGAAT ATTTACCCCT TCAGATCCGT GGGCGTGAGC GCTTCGAGAT 720

74

75 GTTCCGAGAG CTGAATGAGG CCTTGGAACCT CAAGGATGCC CAGGCTGGGA AGGAGCCAGG 780

76

77 GGGGAGCAGG GCTCACTCCA GCCACCTGAA GTCCAAAAAG GGTCACTCTA CCTCCCGCCA 840

78

79 TAAAAAACTC ATGTTCAAGA CAGAAGGGCC TGAAGCAGAC TGACATTCTC CACTTCTTGT 900

80

81 TCCCCACTGA CAGCCTCCCA CCCCCATCTC TCCCTCCCTT GCGATTTTGG GTTTTGGGTC 960

82

83 TTTGAACCCT TGCTTGCAAT AGGTGTGCGT CAGAAGCACC CAGGACTTCC ATTTGCTTTG 1020

84

85 TCCCCGGGCT CCACTGAACA AGTTGGCCTG CACTGGTGTG TTGTTGTGGG GAGGAGGATG 1080

86

87 GGGAGTAGGA CATACCAGCT TAGATTTTAA GGTTTTACT GTGAGGGATG TTTGGGAGAT 1140

88

89 GTAAGAAATG TTCTTGCAAT TAAGGGTTAG TTTACAATCA GCCACATTCT AGGTAGGGGC 1200

90

91 CCACTTCACC GTACTAACCA GGAAGCTGT CCCTCACTGT TGAATTTTCT CTAACCTCAA 1260

92

93 GGCCCATATC TGTGAAATGC TGGCATTTC ACCTACCTCA CAGAGTGCAT TGTGAGGGTT 1320

94

95 AATGAAATAA TGTACATCTG GCCTTGAAAC CACCTTTTAT TACATGGGGT CTAGAACTTG 1380

96

97 ACCCCCTTGA GGGTGCTTGT TCCCTCTCCC TGTGGTTCGG TGGGTGGTA GTTTCTACAG 1440

98

99 TTGGGCAGCT GGTAGGTAG AGGGAGTTGT CAAGTCTCTG CTGGCCCAGC CAAACCCTGT 1500

RAW SEQUENCE LISTING PATENT APPLICATION US/08/758,033A

DATE: 05/14/97
TIME: 12:59:46

INPUT SET: S17693.raw

```

100
101 CTGACAACCT CTTGGTGAAC CTTAGATCCT AAAAGGAAAT GTCACCCCAT CCCACACCCCT 1560
102
103 GGAGGATTTC ATCTCTTGTA TAGATGATCT GGATCCACCA AGACTTGTTT TAGCTCAGGG 1620
104
105 TCCAATTTCT TTTTCTTTT TTTTTTTTTT TTTCTTTTTC TTTGAGACTG GGTCTCTTTG 1680
106
107 TTGCCCCAGG CTGGAGTGGA GTGGCGTGAT CTGGCTTACT GCAGCCTTTG CCTCCCCGGC 1740
108
109 TCGAGCAGTC CTGCCTCAGC CTCCGGAGTA GCTGGGACCA CAGGTTTCATG CCACCATGGC 1800
110
111 CAGCCAACTT TTGCATGTTT TGTAGAGATG GGGTCTCACA GTGTTGCCCA GGCTGGTCTC 1860
112
113 AAACTCCTGG GCTCAGGCGA TCCACCTGTC TCAGCCTCCC AGAGTGCTGG GATTACAATT 1920
114
115 GTGAGCCACC ACGTCCAGCT GGAAGGGTCA ACATCTTTTA CATTCTGCAA GCACATCTGC 1980
116
117 ATTTTCACCC CACCCTTCCC CTCTTCTCCC TTTTATATC CCATTTTAT ATCGATCTCT 2040
118
119 TATTTTACAA TAAAACTTTG CTGCCA 2066
120
121

```

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 293 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

```

132 Lys Thr Tyr Gln Gly Ser Tyr Gly Phe Arg Leu Gly Phe Leu His Ser
133 1 5 10 15
134
135 Gly Thr Ala Lys Ser Val Thr Cys Thr Tyr Ser Pro Ala Leu Asn Lys
136 20 25 30
137
138 Met Phe Cys Gln Leu Ala Lys Thr Cys Pro Val Gln Leu Trp Val Asp
139 35 40 45
140
141 Ser Thr Pro Pro Pro Gly Thr Arg Val Arg Ala Met Ala Ile Tyr Lys
142 50 55 60
143
144 Gln Ser Gln His Met Thr Glu Val Val Arg Arg Cys Pro His His Glu
145 65 70 75 80
146
147 Arg Cys Ser Asp Ser Asp Gly Leu Ala Pro Pro Gln His Leu Ile Arg
148 85 90 95
149
150 Val Glu Gly Asn Leu Arg Val Glu Tyr Leu Asp Asp Arg Asn Thr Phe
151 100 105 110
152

```

RAW SEQUENCE LISTING PATENT APPLICATION US/08/758,033A

DATE: 05/14/97
TIME: 12:59:51

INPUT SET: S17693.raw

```

153      Arg His Ser Val Val Val Pro Tyr Glu Pro Pro Glu Val Gly Ser Asp
154              115                      120                      125
155
156      Cys Thr Thr Ile His Tyr Asn Tyr Met Cys Asn Ser Ser Cys Met Gly
157              130                      135                      140
158
159      Gly Met Asn Arg Arg Pro Ile Leu Thr Ile Ile Thr Leu Glu Asp Ser
160      145                      150                      155                      160
161
162      Ser Gly Asn Leu Leu Gly Arg Asn Ser Phe Glu Val Arg Val Cys Ala
163                      165                      170                      175
164
165      Cys Pro Gly Arg Asp Arg Arg Thr Glu Glu Glu Asn Leu Arg Lys Lys
166                      180                      185                      190
167
168      Gly Glu Pro His His Glu Leu Pro Pro Gly Ser Thr Lys Arg Ala Leu
169                      195                      200                      205
170
171      Pro Asn Asn Thr Ser Ser Ser Pro Gln Pro Lys Lys Lys Pro Leu Asp
172                      210                      215                      220
173
174      Gly Glu Tyr Phe Thr Leu Gln Ile Arg Gly Arg Glu Arg Phe Glu Met
175      225                      230                      235                      240
176
177      Phe Arg Glu Leu Asn Glu Ala Leu Glu Leu Lys Asp Ala Gln Ala Gly
178                      245                      250                      255
179
180      Lys Glu Pro Gly Gly Ser Arg Ala His Ser Ser His Leu Lys Ser Lys
181                      260                      265                      270
182
183      Lys Gly Gln Ser Thr Ser Arg His Lys Lys Leu Met Phe Lys Thr Glu
184                      275                      280                      285
185
186      Gly Pro Asp Ser Asp
187      290
188
189

```

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 2066 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

```

199
200      CAAAACTTAC CAGGGCAACT ATGGCTTCCA CCTGGGCTTC CTGCAGTCTG GGACAGCCAA      60
201
202      GTCTGTTATG TGCACGTACT CTCCTCCCCT CAATAAGCTA TTCTGCCAGC TGGCGAAGAC      120
203
204      GTGCCCTGTG CAGTTGTGGG TCAGCGCCAC ACCTCCAGCT GGGAGCCGTG TCCGCGCCAT      180
205

```

RAW SEQUENCE LISTING PATENT APPLICATION US/08/758,033A

DATE: 05/14/97
TIME: 12:59:56

INPUT SET: S17693.raw

206	GGCCATCCAC	AAGAAGTCAC	AGCACTTGAC	GGGGGTCGTG	AGACGCTGCC	CCCACCATGA	240
207							
208	GCGCTGCTCC	GATGGTGATG	GCCTGGCTCC	TCCCCAGCAT	CTTATCCGGG	TGGAAGGAAA	300
209							
210	TTTGTATCCC	GAGTATCTGG	AAGACAGGCA	GACTTTTTCGC	CACAGCGTGG	TGGTACCTTA	360
211							
212	TGAGCCACCC	GAGGCCGGCT	CTGAGTATAC	CACCATCCAC	TACAAGTACA	TTTGTAAATAG	420
213							
214	CTCCTGCATG	GGGGGCATGA	ACCGCCGACC	TATCCTTACC	ATCATCACAC	TGGAAGACTC	480
215							
216	CAGTGGGAAC	CTTCTGGGAC	GGGACAGCTT	TGAGGTTTCGT	GTTTGTGCCT	GCCCTGGGAG	540
217							
218	AGACCGCCGT	ACAGAAGAAG	AAAATTTCCG	CAAAAAGGAA	GTCTTTTGCC	CTGAAC TGCC	600
219							
220	CCCAGGGAGC	GCAAAGAGAG	CGCTGCCCAC	CTGCACAAGC	GCCTCTCCCC	CGCAAAAGAA	660
221							
222	AAAACCACTT	GATGGAGAGT	ATTTACCCCT	CAAGATCCGC	GGGCGTAAAC	GCTTCGAGAT	720
223							
224	GTTCCGGGAG	CTGAATGAGG	CCTTAGAGTT	AAAGGATGCC	CATGCTACAG	AGGAGTCTGG	780
225							
226	AGACAGCAGG	GCTCACTCCA	GCTACCTGAA	GACCAAGAAG	GGCCAGTCTA	CTTCCCGCCA	840
227							
228	TAAAAAACA	ATGGTCAAGA	AAGTGGGGCC	TGACTCAGAC	TGACATTCTC	CACTTCTTGT	900
229							
230	TCCCCACTGA	CAGCCTCCCA	CCCCCATCTC	TCCCTCCCCCT	GCCTTTTGGG	TTTTTGGGTCT	960
231							
232	TTGAACCCTT	GCTTGCAATA	GGTGTGCGTC	AGAAGCACCC	AGGACTTCCA	TTTGCTTTGT	1020
233							
234	CCCGGGGCTC	CACTGAACAA	GTTGGCCTGC	ACTGGTGTTT	TGTTGTGGGG	AGGAGGATGG	1080
235							
236	GGAGTAGGAC	ATACCAGCTT	AGATTTTAAG	GTTTTTACTG	TGAGGGATGT	TTGGGAGATG	1140
237							
238	TAAGAAATGT	TCTTGCAGTT	AAGGGTTAGT	TTACAATCAG	CCACATTCTA	GGTAGGGGCC	1200
239							
240	CACTTCACCG	TACTAACCAG	GGAAGCTGTC	CCTCACTGTT	GAATTTTCTC	TAACTTCAAG	1260
241							
242	GCCCATATCT	GTGAAATGCT	GGCATTTGCA	CCTACCTCAC	AGAGTGCATT	GTGAGGGTTA	1320
243							
244	ATGAAATAAT	GTACATCTGG	CCTTGAAACC	ACCTTTTATT	ACATGGGGTC	TAGATGACCC	1380
245							
246	CCTTGAGGTG	CTTGTTCCCT	CTCCCTGTTG	GTCGGTGGGT	TGGTAGTTTC	TACAGTTGGG	1440
247							
248	CAGCTGGTTA	GGTTGAGGTA	GTTGTCAGGT	CTCTGCTGGC	CCAGCGAAAT	TCTATCCAGC	1500
249							
250	CAGTTGTTGG	ACCCTGGCAC	CTCAAATGAA	ATCTCACCCCT	ACCCACACCC	CTGTAAGATT	1560
251							
252	CTATCTCTTG	TATAGATGAT	CTGGATCCAC	CAAGAATTGT	TTTAGCTCAG	GGTCCAATTT	1620
253							
254	CTTTTTTCTT	TTTTTTTTTT	TTTTTCTTTT	CTTTTGAGAC	TGGGTCTCTT	TGTTGCCCCA	1680
255							
256	GGCTGGAGTG	GAGTGGCGTG	ATCTGGCTTA	CTGCAGCCTT	TGCCTCCCCG	GCTCGAGCAG	1740
257							
258	TCCTGCCTCA	GCCTCCGGAG	TAGCTGGGAC	CACAGGTTCA	TGCCACCATG	GCCAGCCAAC	1800

PAGE: 1

SEQUENCE VERIFICATION REPORT
PATENT APPLICATION US/08/758,033A

DATE: 05/14/97
TIME: 13:00:03

INPUT SET: S17693.raw

Line

Error

Original Text